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APPLICATION NO.	O. FILING DATE		FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/316,518 05/21/1999		5/21/1999	KENNETH L. STANWOOD	ENS-002-PAP	7910	
20995	7590	7590 05/12/2004			EXAMINER	
KNOBBE	MARTEN	S OLSON & BEA	LY, ANH VU H			
2040 MAIN STREET FOURTEENTH FLOOR					ART UNIT	PAPER NUMBER
IRVINE, CA 92614					2667	\sim 0
					DATE MAILED: 05/12/200-	4

Please find below and/or attached an Office communication concerning this application or proceeding.

(1)							
	Application No.	Applicant(s)					
Office Action Summany	09/316,518	STANWOOD ET AL.					
Office Action Summary	Examiner	Art Unit					
Ti MAN NO DATE (M	Anh-Vu H Ly	2667					
The MAILING DATE of this community Period for Reply	inication appears on the cover sheet	with the correspondence address					
A SHORTENED STATUTORY PERIOD THE MAILING DATE OF THIS COMMUI - Extensions of time may be available under the provisio after SIX (6) MONTHS from the mailing date of this cor - If the period for reply specified above is less than thirty - If NO period for reply is specified above, the maximum - Failure to reply within the set or extended period for rep Any reply received by the Office later than three month earned patent term adjustment. See 37 CFR 1.704(b).	NICATION. ns of 37 CFR 1.136(a). In no event, however, may nmunication. (30) days, a reply within the statutory minimum of t statutory period will apply and will expire SIX (6) M by will, by statute, cause the application to become s after the mailing date of this communication, ever	a reply be timely filed hirty (30) days will be considered timely. ONTHS from the mailing date of this communication. ABANDONED (35 U.S.C. § 133).					
Status							
1) Responsive to communication(s) f	iled on <u>01 <i>March</i> 2004</u> .						
2a) This action is FINAL.	This action is FINAL . 2b)⊠ This action is non-final.						
	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is						
closed in accordance with the prac	ctice under <i>Ex parte Quayle</i> , 1935 C	.D. 11, 453 O.G. 213.					
Disposition of Claims							
4a) Of the above claim(s) is. 5) ⊠ Claim(s) <u>78-87</u> is/are allowed. 6) ⊠ Claim(s) <u>24-51,70,71,73 and 88-96</u> 7) ☐ Claim(s) is/are objected to.	Claim(s) <u>24-51,70,71,73 and 88-96</u> is/are rejected.						
Application Papers							
9)☐ The specification is objected to by	the Examiner.						
10)☐ The drawing(s) filed on is/are: a)☐ accepted or b)☐ objected to by the Examiner.							
	jection to the drawing(s) be held in abey						
Replacement drawing sheet(s) including 11) The oath or declaration is objected	-	ng(s) is objected to. See 37 CFR 1.121(d).					
	to by the Examiner. Note the attach	ed Office Action of form 1 10-102.					
Priority under 35 U.S.C. § 119							
2. Certified copies of the priorit3. Copies of the certified copie	by documents have been received. By documents have been received in softhe priority documents have been ional Bureau (PCT Rule 17.2(a)).	Application No en received in this National Stage					
Attachment(s)							
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review 3) Information Disclosure Statement(s) (PTO-1449 Paper No(s)/Mail Date	(PTO-948) Paper N	w Summary (PTO-413) o(s)/Mail Date if Informal Patent Application (PTO-152)					

U.S. Patent and Trademark Office PTOL-326 (Rev. 1-04) Application/Control Number: 09/316,518

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 01, 2004 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 2. Claims 24, 26-38, 42-48, 50-51, and 88-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Papadopoulos et al (US Patent No. 5,594,720).

With respect to claims 24, 26-34, 36, 38, 42-48, 50-51, and 88-91, Papadopoulous et al discloses (col. 5, lines 11-52 and Fig 4) a format for frame 401. Frame 401 is divided into four sections. Call management sections are handled by uplink control section 405, which contains bits for handling requests for uplink information slots, and downlink control section 407, which contains bits indicating which uplink and downlink information slots are assigned for the uplink and downlink users to send and receive information. The remainder of frame 401 is divided into S slots, S=U + D + A, where U slots allocated for uplink information transfer and D slots

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allocated for downlink information transfer. The number of slots allocated between uplink section 410 and downlink section 415 can vary with each frame as indicated by partition 412. Wherein, the partition 412 between the uplink and downlink slots varies according to demand (uplink and downlink bandwidth requirements ratio are predicted, set, and allocated using associated and respective bandwidth utilization parameters). Further, such dynamic bandwidth allocation is implemented in the cellular communication system, as illustrated in Fig. 1 (periodically enabling uplink transmissions during allocated uplink time slots and downlink transmissions during allocation downlink time slots).

With respect to claims 35 and 37, Papadopoulous et al discloses in Fig. 7, a diagram of partially-shared time division duplexing frame format (a frame comprises N time slots); wherein, a number of slots 715 allocated for downlink transmission (a first number N1 time slots allocated for downlink transmissions only) and wherein, the remaining slots 710 and 720 allocated for uplink and downlink transmissions (allocating the remaining N2 time slots for both uplink and downlink transmissions).

3. Claims 70-71 and 73 are rejected under 35 U.S.C. 102(e) as being anticipated by Raith et al (US Patent No. 5,729,531).

With respect to claims 70-71 and 73, Raith et al discloses (see Abstract) a general allocation method to approximately evenly distribute the mobile stations on the available channels (initializing the base station with an initial set of bandwidth utilization parameters, including a first estimate of the uplink and downlink bandwidth requirements of at least one CPE

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in a frame). After a mobile station begins active communication on the system, a second allocation (updating initial set of bandwidth utilization parameters with an actual set of bandwidth utilization parameters based on the monitoring) is used to change the phase (slots), of some mobile stations on a channel, which has become heavily loaded (monitoring bandwidth use by at least one CPE and the base station).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claims 25, 39-41, 49, and 92-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papadopoulos et al (US Patent No. 5,594,720) in view of Raith et al (US Patent No. 5,729,531).

With respect to claims 25 and 49, Papadopoulos et al discloses a method of dynamically allocating time slots within a frame for uplink and downlink transmissions. Papadopoulos et al does not disclose uplink and downlink bandwidth requirements are initially determined when the link is installed in the communication system. Raith et al discloses (see Abstract) a method of evenly distributed bandwidth of the available channels to the mobile stations before the mobile stations actively communicated in the system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of allocating

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bandwidth to the mobile stations before the mobile stations actively communicated in Papadopoulos et al's system, as suggested by Raith et al, for initial data transmissions.

With respect to claims 39-41 and 92-96, Papadopoulos et al discloses a method of dynamically allocating time slots within a frame for uplink and downlink transmissions. Papadopoulos et al does not disclose statistical bandwidth parameters comprise both an initial and actual set of statistical parameters reflective of the bandwidth requirements of the communication link. Raith et al discloses (see Abstract) a general allocation (initial set of statistically parameters reflective of bandwidth requirements) method to approximately evenly distribute the mobile stations on the available channels. After a mobile station begins active communication on the system, a second allocation (actual set of statistical parameters reflective of bandwidth requirements) is used to change the phase (slots), of some mobile stations on a channel, which has become heavily loaded. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of allocating bandwidth to the mobile stations according to the initial and actual set of statistical parameters in Papadopoulos et al's system, as suggested by Raith et al, to flexibly accommodate different transmissions needs.

Allowable Subject Matter

5. Claims 78-87 are allowed.

Response to Arguments

6. Applicant's arguments filed March 01, 2004 have been fully considered but they are not persuasive.

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Applicant argues on page 13 that Papadopoulos fails to teach or disclose a forward looking prediction of bandwidth requirements which is then used to set up the uplink/downlink ratio for a frame based on the bandwidth requests and other factors such as interference with adjacent base stations. Examiner respectfully disagrees. First of all, independent claim 24 does not recite that forward looking prediction considered other factors such as interference with adjacent base stations. Besides, Papadopoulos (see Abstract) discloses an apparatus and method for reducing co-channel interference and assigning the requested bandwidth by adjusting the allocated uplink and downlink slots in a frame. Papadopoulos discloses that the frame slots in which the antennas communicate uplink and downlink information are arranged in accordance with a predetermined frame organization (prediction) to reduce mixed co-channel interference. Therefore, Papadopoulos's systems is not reactive to the demands for bandwidth but including other factors such as interference in assigning slots in the frame.

Applicant argues on page 14 that Raith fails to teach or suggest using initially known connection information, for example, quality of service, for adjusting uplink/downlink ratio. Examiner respectfully disagrees. Independent claim 70 does not recite quality of service for adjusting uplink and downlink ratio.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 703-306-5675. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl

SUPERVISORY PATENT EXAMINER